

Clean corrected claims

An ultrasonic longitudinal-torsion tissue dissection system comprising an electrical generator supplying alternating electrical voltage and by connection to

a electro-mechanical transducer excited by the electrical generator, the electro-mechanical transducer [that is] joined mechanically to a

longitudinal-torsional resonator excited by the electro-mechanical transducer at a frequency for providing combined longitudinal and torsional motion in frequency synchronism, the longitudinal-torsional resonator mechanically joined to

a tip shaped for cutting of [in contact with] biological tissue.

- 2. The system of claim 1 where the electro-mechanical transducer is a longitudinal transducer.
- 3. The system of claim 1 where the electro-mechanical transducer is a torsional transducer.
- An ultrasonic longitudinal-torsion tissue dissection system comprising an electrical generator supplying alternating electrical voltage and current by connection to
 - an electro-mechanical transducer excited by the electrical generator, the electro-mechanical transducer [that is] joined mechanically to a



longitudinal-torsional resonator excited by the electro-mechanical transducer at a frequency for providing combined longitudinal and torsional motion in frequency synchronism, the longitudinal-torsional resonator mechanically joined to a tip shaped for cutting of [in contact with] biological tissue[.]

a source of irrigation fluid connected to said longitudinal-torsional resonator.

- 5. The system of claim 4 where the electro-mechanical transducer is a piezo longitudinal transducer.
- 6. The system of claim 4 where the electro-mechanical transducer is a piezo torsional transducer.
- 7. The system of claim 4 where said source of irrigation fluid is connected to said electro-mechanical transducer.
- 8. An ultrasonic longitudinal-torsion tissue dissection system comprising an electrical generator supplying alternating electrical voltage and current by connection to

an electro-mechanical transducer excited by the electrical generator, the electro-mechanical transducer joined mechanically to a

longitudinal-torsional resonator excited by the electro-mechanical transducer at a frequency for providing combined longitudinal and torsional motion in frequency synchronism, the longitudinal-torsional resonator mechanically joined to



a tip shaped for dissecting biological tissue,

a vacuum source connected to

said longitudinal-torsional resonator.

- 9. The system of claim 8 where the electro-mechanical transducer is a longitudinal transducer.
- The system of claim 8 where the electro-mechanical transducer is a 10. torsional transducer.
- 11. The system of claim 8 where said source of irrigation fluid also provides vacuum and is connected to said electro-mechanical transducer.